CLAIMS

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is as follows:

1. A method for determining the failure location of units on redundant unit type semiconductor devices comprising:

determining the address of the failure; and

determining the physical location of the failure by applying a set of displacement and mirror factors to the address.

2. The method in claim 1, wherein said address comprises a two-dimensional failmap address, said physical location comprises a n-dimensional electrical address of said failure location and n comprises a natural number.

3. The method in claim 1, further comprising:

identifying repeatable units of said units;

preparing a look up table for translating buffer coordinates of a reference unit of said repeatable units;

displacing information from said look up table to correspond to said repeatable units; and

modifying results of said displacing by a linear operation or a scalar translation table comprising key-value pairs.

4. The method in claim 3, wherein said displacing includes mirroring said information from said look up table to correspond to said repeatable units

5. The method in claim 3, wherein said reference unit comprises a smallest repeatable unit.

6. The method in claim 5, further comprising:

identifying a first level of repeatable units, having a size larger than said smallest repeatable unit;

identifying a second level of repeatable units, having a size larger than said first level of repeatable units; and

recursively displacing said information from said look up table to correspond respectively to said smallest repeatable units, said first level of repeatable units and second level of repeatable units.

7. The method in claim 3, wherein said displacing and modifying comprise translating said buffer coordinates using at least one of the following functions:

$$g(x,y) = A \bullet f(ax + b, cy+d) + B; \text{ and}$$

$$g(x,y) = MAP(ax + b, cy + d)$$

wherein variable A comprises one of an amplification and pattern reversal value, variable B comprises a linear displacement of said information from said look up table, variable b comprises a horizontal displacement from said reference unit, variable d comprises a vertical displacement from said reference unit, variable a comprises horizontal mirroring, variable c comprises vertical mirroring, and MAP is a scalar translation table comprising key-value pairs.

8. A method for translating address buffer coordinates for a device under test having two or more similar repeatable units, said method comprising:

identifying a repeatable unit of said repeatable units;

preparing a look up table for translating buffer coordinates of a reference unit of said repeatable units;

displacing information from said look up table to correspond to said repeatable units; and

modifying results of said displacing by a linear operation or a scalar translation table comprising key-value pairs.

9. The method in claim 8, wherein said displacing includes mirroring said information from said look up table to correspond to said repeatable units

10. The method in claim 8, wherein said reference unit comprises a smallest repeatable unit.

11. The method in claim 10, further comprising:

identifying a first level of repeatable units, having a size larger than said smallest repeatable unit;

identifying a second level of repeatable units, having a size larger than said first level of repeatable units; and

recursively displacing said information from said look up table to correspond respectively to said smallest repeatable units, said first level of repeatable units and second level of repeatable units.

12. The method in claim 8, wherein said displacing and modifying comprise translating said buffer coordinates using at least one of the following functions:

$$g(x,y) = A \bullet f(ax + b, cy+d) + B; \text{ and}$$

$$g(x,y) = MAP(ax + b, cy + d)$$

wherein variable A comprises one of an amplification and pattern reversal value, variable B comprises a linear displacement of said information from said look up table, variable b comprises a horizontal displacement from said reference unit, variable d comprises a vertical displacement from said reference unit, variable a comprises horizontal mirroring, variable c comprises vertical mirroring, and MAP is a scalar translation table comprising key-value pairs.

13. A computer system for translating address buffer coordinates for a device under test having two or more similar repeatable units, said method comprising:

a unit for identifying a repeatable unit of said repeatable units;

a unit for preparing a look up table for translating buffer coordinates of a reference unit of said repeatable units;

a unit for displacing information from said look up table to correspond to said repeatable units; and

a unit for modifying results from said displacing unit by a linear operation, a scalar translation table comprising key-value pairs or a combination of both.

14. The computer system in claim 13, wherein said unit for displacing includes a unit for mirroring said information from said look up table to correspond to said repeatable units

15. The computer system in claim 13, wherein said reference unit comprises a smallest repeatable unit.

16. The computer system in claim 15, further comprising:

a unit for identifying a first level of repeatable units, having a size larger than said smallest repeatable unit;

a unit for identifying a second level of repeatable units, having a size larger than said first level of repeatable units; and

a unit for recursively displacing said information from said look up table to correspond respectively to said smallest repeatable units, said first level of repeatable units and second level of repeatable units.

17. The computer system in claim 15, wherein said unit for displacing and said unit for modifying comprises a unit for translating said buffer coordinates using at least one of the following functions:

$$g(x,y) = A \bullet f(ax + b, cy+d) + B; \text{ and}$$

$$g(x,y) = MAP(ax + b, cy + d)$$

wherein variable A comprises one of an amplification and pattern reversal value, variable B comprises a linear displacement of said information from said look up table, variable b comprises a horizontal displacement from said reference unit, variable d comprises a vertical displacement from said reference unit, variable a comprises horizontal mirroring, variable c comprises vertical mirroring, and MAP is a scalar translation table comprising key-value pairs.

18. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machines to perform method steps for translating address buffer coordinates for a device under test having two or more similar repeatable units, said method comprising:

identifying a repeatable unit of said repeatable units;

preparing a look up table for translating buffer coordinates of a reference unit of said repeatable units;

displacing information from said look up table to correspond to said repeatable units; and

modifying results of said displacing by a linear operation or a scalar translation table comprising key-value pairs.

19. The program storage device in claim 18, wherein said displacing includes mirroring said information from said look up table to correspond to said repeatable units

20. The program storage device in claim 18, wherein said reference unit comprises a smallest repeatable unit.

21. The program storage device in claim 20, said method further comprising:

identifying a first level of repeatable units, having a size larger than said smallest repeatable unit;

identifying a second level of repeatable units, having a size larger than said first level of repeatable units; and

recursively displacing said information from said look up table to correspond respectively to said smallest repeatable units, said first level of repeatable units and second level of repeatable units.

22. The program storage device in claim 18, wherein said displacing and modifying comprise translating said buffer coordinates using at least one of the following functions:

$$g(x,y) = A \bullet f(ax + b, cy+d) + B; \text{ and}$$

$$g(x,y) = MAP(ax + b, cy + d)$$

wherein variable A comprises one of an amplification and pattern reversal value, variable B comprises a linear displacement of said information from said look up table, variable b comprises a horizontal displacement from said reference unit, variable d comprises a vertical displacement from said reference unit, variable a comprises horizontal mirroring, variable c comprises vertical mirroring, and MAP is a scalar translation table comprising key-value pairs.

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